

## Configuring the JUNOS Software for Supporting Aggregated Devices

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JUNOS Software supports the aggregation of physical devices into defined virtual links, such as the link aggregation of Ethernet interfaces defined by the IEEE 802.3ad standard.

Tasks for configuring aggregated devices are:

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### Configuring Virtual Links for Aggregated Devices

To define the virtual links, you need to specify the associations between physical and logical devices within the [edit interfaces] hierarchy, and assign the correct number of logical devices by including the `device-count` statement at the [edit chassis aggregated-devices ethernet] and [edit chassis aggregated-devices sonet] hierarchy levels:

```
[edit chassis]
aggregated-devices {
  ethernet {
    device-count number;
  }
  sonet {
    device-count number;
  }
}
```

The maximum number of Ethernet logical interfaces you can configure is 128. The aggregated Ethernet interfaces are numbered from `ae0` through `ae127`. The maximum number of SONET/SDH logical interfaces is 16. The aggregated SONET/SDH interfaces are numbered from `as0` through `as15`.

### Configuring LACP Link Protection at the Chassis Level

Link Aggregation Control Protocol (LACP) is one method of bundling several physical interfaces to form one logical interface. You can configure both VLAN-tagged and untagged aggregated Ethernet with or without LACP enabled. LACP exchanges are made between actors and partners. An actor is the local interface in an LACP exchange. A partner is the remote interface in an LACP exchange.

LACP link protection enables you to force active and standby links within an aggregated Ethernet. You configure LACP link protection by configuring the `link-protection` and `system-priority` statements at either the chassis or interface level and by configuring port priority at the interface level using the `port-priority` statement. Configuring LACP parameters at the chassis level results in all aggregated Ethernet

interfaces using these values unless overridden by LACP configuration on a specific interface.

```
[edit chassis]
aggregated-devices {
  ethernet {
    lACP {
      link-protection {
        non-revertive;
      }
      system-priority priority;
    }
  }
}
```

You configure LACP link protection by using the `link-protection` and `system-priority` statements and define port priority at the port level using the `port-priority` statement. Configuring LACP parameters at the chassis level results in all aggregated Ethernet interfaces using the defined configuration unless overridden on a specific interface.



**NOTE:** LACP link protection also uses port priority. You can configure port priority at the Ethernet interface [`gather-options`] hierarchy level using the `port-priority` statement. If you choose not to configure port priority, LACP link protection uses the default value for port priority (127). See the *JUNOS Network Interfaces Configuration Guide* for detailed information about LACP and how to configure it on individual aggregated Ethernet interfaces.

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## Enabling LACP Link Protection

To enable LACP link protection for aggregated Ethernet interfaces on the chassis, use the `link-protection` statement at the [`edit chassis aggregated-devices ethernet lACP`] hierarchy level:

```
[edit chassis aggregated-devices ethernet lACP]
link-protection {
  non-revertive;
}
```

By default, LACP link protection reverts to a higher-priority (lower-numbered) link when that higher-priority link becomes operational or a link is added to the aggregator that is determined to be higher in priority. However, you can suppress link calculation by adding the `non-revertive` statement to the LACP link protection configuration. In nonrevertive mode, once a link is active and collecting and distributing packets, the subsequent addition of a higher-priority (better) link does not result in a switch, and the current link remains active.



**CAUTION:** If both ends of an aggregator have LACP link protection enabled, make sure to configure both ends of the aggregator to use the same mode. Mismatching LACP link protection modes can result in lost traffic.

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## Configuring System Priority

To configure LACP system priority for aggregated Ethernet interfaces on the chassis, use the `system-priority` statement at the `[edit chassis aggregated-devices ethernet lacp]` hierarchy level:

```
[edit chassis aggregated-devices ethernet lacp]
system-priority priority;
```

The system priority is a 2-octet binary value that is part of the LACP system ID. The LACP system ID consists of the system priority as the two most-significant octets and the interface MAC address as the six least-significant octets. The system with the numerically lower value for system priority has the higher priority. By default, system priority is 127, with a range of 0 to 65535.

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